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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,021

07/26/2006

Ian Mackinnon

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EXAMINER

JOHNSON, KEVIN M

ART UNIT

PAPER NUMBER

1732

MAIL DATE

DELIVERY MODE

05/31/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,021	Applicant(s) MACKINNON ET AL.	
	Examiner KEVIN JOHNSON	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 91-115 is/are pending in the application.
- 4a) Of the above claim(s) 97, 98, 100-107, 109 and 110 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 91-96, 99, 108 and 111-115 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/9/2011 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 91-96, 99, 108 and 111-115 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen et al. (Acta Chemica Scandinavica, 1997, 51, pp. 969-973) in view of Barrer et al. (J. Chem. Soc. (A), 1970, pp. 2735-2745).

In regard to claims 91, 114 and 115, Christensen discloses a zeolite N material described by the formula $K_{2.4}Al_2Si_2O_8Cl_{0.4} \cdot H_2O$ (p. 969), which when rewritten in the format required by the instant claims is $K_{12}(Al_1Si_1)_{10}O_{40}Cl_2 \cdot 5H_2O$. It is also taught that zeolite N had been produced with the composition $K_{2.7}Al_2Si_{2.54}O_9Cl_{0.7} \cdot 0.55H_2O$ by Barrer and Marcilly (p. 969), which rewritten in the format required by the instant claims is $K_{12}(Al_{0.88}Si_{1.13})_{10}O_{40}Cl_{3.1} \cdot 2.44H_2O$. Christensen fails to expressly disclose a material that meets the compositional requirements of the instant claims including that if $a=0$, $b=1$, $c=1$, $d=0$ and $X=Cl$ then M is not selected to be K.

Barrer discloses zeolite N. The material disclosed by Barrer preferably has a $SiO_2:Al_2O_3$ ratio in the range of 1-4, with the best results being achieved with a ratio in the range of 2-3 (p. 2742).

It would have been obvious to one of ordinary skill in the art at the time of the invention to produce a zeolite N material of the type disclosed by Christensen where b and/or c are not selected to be 1. Such a modification would have been motivated by

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the teaching in Christensen that the material produced by Barrer was indeed zeolite N and the teaching in Barrer that the best results are achieved when a ratio of $\text{SiO}_2:\text{Al}_2\text{O}_3$ is in the range of 2-3. This preferred ratio range corresponds to a c/b ratio of 1-1.5 in the nomenclature of the instant claims and would as a result necessarily include compositions where b and c are not selected to be 1.

In regard to claims 92-96, 99 and 108, the material suggested by Christensen and Barrer would be the same as the material required by the instant claims, and it would therefore necessarily follow that the material would exhibit the same properties. Similarities may be seen in the x-ray diffraction pattern in figure 3b in Christensen.

In regard to claims 111-113, Christensen discloses a zeolite N material with the composition $\text{K}_{2.7}\text{Al}_2\text{Si}_{2.54}\text{O}_9\text{Cl}_{0.7} \cdot 0.55\text{H}_2\text{O}$ as produced by Barrer (p. 969), which rewritten in the format required by the instant claims is $\text{K}_{12}(\text{Al}_{0.88}\text{Si}_{1.13})_{10}\text{O}_{40}\text{Cl}_{3.1} \cdot 2.44\text{H}_2\text{O}$. The c/b ratio in this material is 1.28.

Barrer discloses that the preferred $\text{SiO}_2:\text{Al}_2\text{O}_3$ ratio is in the range of 2-3 (p. 2742). Rewritten in the format of the instant claims this corresponds to a c/b ratio of 1-1.5.

It would have been obvious to one of ordinary skill in the art at the time of the invention to produce a zeolite N material of the general type disclosed by Christensen with a c/b ratio in the range required by the instant claims. This modification would be motivated by the teaching in Christensen that zeolite N material may have a c/b ratio of 1.28 and the disclosure in Barrer that c/b ratios of 1-1.5 are preferred for zeolite N.

Response to Arguments

6. Applicant's arguments, see pages 2-5, filed 5/9/2011, with respect to the rejection(s) of claim(s) 91-96, 99, 108 and 111-115 under 35 USC 103 based on Christensen and Acara have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Christensen and Barrer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN JOHNSON whose telephone number is (571)270-3584. The examiner can normally be reached on Monday-Friday 9:00 AM to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Mayes can be reached on 571-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEVIN JOHNSON/
Examiner, Art Unit 1732

/DAVID M BRUNSMAN/
Primary Examiner, Art Unit 1732